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Goal projection and giving help ☆

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HIGHLIGHTS

- Goal projection is the assumption that another person shares one's goals.
- Goal projection in a cooperative context increases quantity and quality of help.
- Goal projection strengthens associative links between projected goal and target person.
- Manipulation of goal strength verified that goals were projected and not other concepts.

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ABSTRACT

Goal projection is the assumption that other persons share goals that we are currently pursuing. Hypothesizing that the projection of one's goal onto another person should affect actual behavior, we observed that goal projection in a situation where help is called for increased both the quantity and the quality of help given (Studies 1 and 2). An implicit measure of goal projection (i.e., a primed lexical decision task) suggested that participants' goals were indeed projected to the target person (Study 2). Varying goal strength via failure versus success feedback verified that goals rather than other concepts (e.g., personal attributes such as traits or self-concepts) were projected (Study 3). The findings imply that goal projection by feigning that the other person has a similar goal affects actual behavior in line with contextual demands.

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Imagine that you have a doctor's appointment and you entered the main lobby of the building. As you scan the directions to Dr. X's office, you notice another person standing close by staring at the same set of directions. Assuming that she also wants to see your doctor, you cordially give her a tip: "Dr. X's office is this way." Goal projection led you to give help to the lost person in line with your own goal. But how did you know that the helped person really intended to see your doctor?

In the absence of substantial information about others, as in the example above, we tend to project our own inclinations, tendencies, and preferences (Krueger, 2000, 2007; Ross, Greene, & House, 1977). Projection occurs because we have selective exposure to our own mental states so we recall our own inclinations, tendencies, and preferences first, as these are cognitively available and easily accessible when inferring other people's mental states (Ames, 2004a, 2004b; Dawes, 1990; Kelley & Jacoby, 1996; Krueger, 2007; Ross et al., 1977). Constructs that are easily accessible tend to be applied when judging others (Andersen & Chen, 2002; Higgins, King, & Mavin, 1982; Marks & Miller, 1987; Markus, Smith, & Moreland, 1985) and thus they can also be projected onto others (Bornstein, 1993; Erdelyi, 1985; Newman, Duff, & Baumeister, 1997).

The present research examined the interpersonal consequences of the projection of goals, which is assuming that others hold a similar goal as one is currently pursuing (Kawada, Oettingen, Gollwitzer, & Bargh, 2004). Specifically, we hypothesized that in settings where providing help is called for, goal projection should promote helping behavior in support of the target person's presumed goal pursuit. Put another way, when people project their goals in settings where helping behavior is the default response (what Lewin, 1935, 1997, referred to as the "potency of the situation"), we hypothesized that they should give more help to the other person.

Consider once again the example of the doctor's office: The person assuming that she and the other person in the hallway shared the same goal offered a tip, because the "potency of the situation" prompted

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supportive behavior. In other words, supportive behavior is the default response when someone is lost and I know my way.

Projection: theory and research

Compared to the classic Freudian conceptualization of projection (defined as ascribing one's personal attributes onto others) as a defense mechanism (Freud, 1915/1953), projection research today has a broader scope. According to D. S. Holmes (1978), "[projection] is the process by which persons attribute personality traits, characteristics, or motivations to other persons as a function of their own personality traits, characteristics, or motivations" (p. 677). This definition has provided a broad conceptual umbrella for the findings of current social projection[1] research. For example, research on the false consensus effect demonstrated that people overestimate the degree to which others think as they do based on their own attitudes and beliefs (Ross et al., 1977). Or, findings on the egocentric bias, referred to as the "spotlight" effect, showed that people overestimate the extent that others notice their actions (review by Dunning, 2003). Research on assumed similarity between partners in relationships showed that significant others believe their partners share similar attitudes and beliefs as they do (Murray, Holmes, Bellavia, Griffin, & Dolderman, 2002). Finally, research on groups found that people project more favorable traits and values to in-group than out-group members (Krueger, 1998; review by Krueger, 2000; Krueger & Zeiger, 1993; Robbins & Krueger, 2005).

What has been less emphasized in social projection research is whether people also project their motivational states onto others. Kawada et al. (2004) investigated goal projection as a distinct phenomenon within social projection, where people project both implicitly activated and explicitly set goals. The present research builds on the work by Kawada et al. (2004). However, rather than showing that goal projection exists which was the focus of the research conducted by Kawada et al., the present paper focuses on the behavioral consequences of goal projection. Specifically, we hypothesize that people who project their goal onto a target person will behave towards the target person as if they knew what the target person's goal is (i.e., the same as theirs), leading them to act in line with what seems opportune for the other person to do in the current situation. For example, we investigate whether a person with an achievement goal would *help* the target person to achieve well in a context where helping the target person is called for.

Goal projection

In three studies, Kawada et al. (2004) demonstrated the existence of goal projection. In a first study, participants were pre-selected as embracing an entity or incremental theory (i.e., intelligence is stable vs. malleable; Dweck & Leggett, 1988; Dweck, 1999; Rattan, Good, & Dweck, 2012). Entity versus incremental theories are known to facilitate the activation of performance versus learning goals, respectively, once an achievement situation is encountered. Accordingly, Kawada et al. observed that people holding entity versus incremental theories projected performance versus learning goals onto fictitious characters. Specifically, participants had to predict the behaviors of fictitious characters described in three different achievement-related scenarios. For example, in one scenario, a character named Glenn received feedback from his teacher that he did very poorly on a project counting towards his course grade, but was given the option of improving his grade either by turning in an entirely new project or by revising his original project. Participants then indicated the degree to which they thought Glenn would turn in a new project (thereby projecting a performance goal) or revise his old project (thereby projecting a learning goal). Incremental theorists more than entity theorists, thought that Glenn would want to revise his old project.

In a second study, Kawada et al. (2004) tested whether both implicit goals (goals activated outside of awareness) and explicit goals are projected on others. In this study, participants were placed in one of three goal conditions. In the implicit goal condition, participants were primed with the goal to compete by a scrambled sentences task. In the explicit goal condition, participants received verbal directions that instructed them to compete. And in the no goal condition, participants received a scrambled sentences task of neutral content. In a subsequent supposedly unrelated task, participants had to predict the moves of two fictitious characters engaged in a prisoner's dilemma game. Both the implicit and explicit goal participants projected more competitive moves onto these characters than those in the no goal condition.

Finally, in a third study, Kawada et al. (2004) assessed whether goal projection involves the projection of a goal rather than a trait. Participants were again placed in one of three goal conditions. In order to test whether a goal was projected, the strength of the goal was manipulated. Research on both striving for identity goals (e.g., Brunstein & Gollwitzer, 1996; Ledgerwood, Liviatan, & Carnevale, 2007; Wicklund & Gollwitzer, 1982) and research on regulatory fit (e.g., Förster, Liberman, & Higgins, 2005) suggests that goals decrease in strength when positive feedback is encountered but maintain their intensity when met with negative feedback. Thus, before being presented with the prisoner's dilemma game, all participants engaged in a separate goal-relevant (i.e., competitive) task against a hypothetical partner. Half of the participants received positive feedback, indicating that they outperformed their partner, thereby weakening the strength of the goal. The other half of the participants received negative feedback, indicating that their partner outperformed them, thereby maintaining the strength of the goal. As it turned out, only negative feedback participants in the implicit and explicit goal conditions but not positive feedback participants showed goal projection effects (i.e., participants predicted that people engaged in the prisoner's dilemma game behaved competitively). The pattern of results was in line with the claim that goals rather than traits, attitudes, or beliefs were projected because the projection of traits, attitudes, or beliefs should not be affected by respective goal completion.

The present research

Kawada et al. (2004) confirmed that goals are projected onto others, whether the projector is aware of pursuing the projected goal or not. But how does projecting one's goals affect subsequent behavior towards the target person? It should depend on the situation. For instance, assuming a shared goal in settings where competitive behavior is called for should spur assertive and competitive behavior towards the other person. To the contrary, assuming a shared goal in settings where supportive behavior is called for should spur help and supportive behavior towards the target person. The current research focuses on the latter setting.

Specifically, we established a context that calls for support to the target person, proposing that projecting a goal in that context would lead participants to help the target person. We were more interested in whether projecting participants tried to help, rather than whether their help was effective. Because the goal of the person who is the target of projection is in fact unknown, the help that a projecting person provides might prove less effective than intended. Going back to the initial example, pointing out the way to one's doctor's office might even be counterproductive for the person in the hallway. Maybe she came to the building to see her lawyer—rather than being on her way to the doctor.

In the present three studies, we first established a specific goal (i.e., to be creative in Study 1, to achieve in Studies 2 and 3) or no goal. We provided the goals either explicitly (Study 1) or implicitly (Studies 2 and 3). Then, to establish a context which calls for help, we gave participants a description of a person who could use some help

[1] Social projection serves as an umbrella term for the various forms of perceived consensus of traits, attitudes, beliefs, and characteristics (Krueger, 1998, 2000; Krueger, 2008).

(i.e., middle school students who had to solve analytical problems in Study 1 and a student entering college for the first time in Studies 2 and 3). Finally, depending on condition, we varied the information participants received about the target person (i.e., the person whom participants would be able to help). All studies had at least three conditions: a target person unknown goal condition, a target person same goal condition, and a target person different goal condition. In addition to these three conditions, Studies 2 and 3 employed a further control condition (the participant no goal/target person unknown goal condition). The main dependent variables were the extent to which participants helped the target person (Study 1), as well as the quality of help (Studies 2 and 3).

In the first condition, the unknown goal condition, participants were either assigned or primed a goal and learned that the target person's goal was unknown. Here, we expected to observe projection effects. In the second condition, the same goal condition, participants were either assigned or primed a goal and learned that the target person had the same goal. We used this condition as the comparison group that should not differ in the help given from the unknown goal condition, given that goal projection occurred in the latter unknown goal condition. In the third condition, the different goal condition, participants were either assigned or primed a goal and learned that the target person had a different goal. Projection research has repeatedly shown that people do not project to those who are dissimilar from them (Ames, 2004a, 2004b; Orive, 1988). Based on this research, we expected participants in the different goal condition to give less help than participants in both the unknown goal and same goal conditions. Lastly, in the participant no goal/target unknown goal condition, participants were not assigned or primed a goal and learned that the target person's goal was unknown. We did not expect goal projection effects to occur in this condition because we had never activated a goal in the participants.

Using the described design, we conducted three experiments. Study 1 tested whether projecting explicit goals on the target person increased the quantity of help given to that person (i.e., middle school student). Study 2 examined whether projecting implicitly activated goals on the target person affected both the quantity and quality of relevant help given to the person (i.e., prospective student). In addition, Study 2 used an implicit measure (i.e., a primed lexical decision task) as an indirect way of assessing whether a goal has indeed been projected to the target person. Finally, Study 3 used a simplified design to examine whether a goal rather than a person attribute such as a trait or value was projected onto the target person. For this purpose, we varied the strength of the goal by giving participants either relevant failure or success feedback and then used a primed lexical decision task to measure the strength of the mental association between the goal and the target person.

Study 1: the projection of explicit goals and help given

Overview

Participants were told that the purpose of the study was to improve the cognitive abilities of middle school students. They were then presented with an anagram task that would later be solved by these students as well. In order to advise the middle school students and help them solve these anagrams, participants were asked to work on the anagrams with the goal to be as creative as possible. Depending on condition, participants then received varying information regarding the goal that the middle school students would have when they worked on the task. In the unknown goal condition, participants were told the students' goal was unknown. In the same goal condition, participants were told the students would have the goal to be as creative as possible. Finally, participants in the different goal condition were told the students would have the goal to find as many words as possible. After 5 min of working on the anagram task, all participants were asked to write a letter of advice to middle school students, providing strategies the students can use while performing the anagram task. We predicted that participants in the unknown goal and the same goal conditions should give more advice than participants in the different goal condition, while participants in the former two conditions should not differ from each other.

Method

Participants

A total of 123 students (77 females) from New York University participated to fulfill a partial requirement for an introductory psychology course. Eight participants were excluded from analyses because they did not understand the anagram task; analyses were thus performed on the remaining 115 participants.

Procedure and materials

The experimenter explained that the purpose of the study was to investigate the cognitive skills involved in problem solving. Because the lab investigates cognitive skills, the New York public school system decided to collaborate with the Psychology Department at NYU to develop ways to improve the cognitive skills of middle school students.

Participants' goal. In all participants, we established an explicit goal to be creative when solving the upcoming anagram task: “In this task, you will be given 10 sets of 10 letters. For each set of 10 letters, your job is to come up with words using any of the 10 letters provided. We will also administer this same task to middle school students. While performing this task, we would like you to be as creative as possible.”

Target persons' goal. Depending on condition, participants received varying information regarding the goal that the middle school students would have while working on the anagram task. Participants in the unknown goal condition were told the following: “Note that the goal of the middle school students is unknown.” Participants in the same goal condition were told: “Note that the middle school students will be asked to be as creative as possible.” And finally, participants in the different goal condition were told: “Note that the middle school students will not be asked to be as creative as possible, but just to find as many words as possible.” Following this manipulation, participants were presented with 10 sets of 10 letters, each of which consisted of seven consonants and three vowels; participants were given as much time as they needed to complete the task.

Letters of advice. After completing the anagram task, participants received a sheet of paper with instructions at the top of the page that read: “In the space provided below, please enumerate the strategies the middle school students might use while performing this task. Please take as much time and space as you need.” The main dependent measure was the amount of advice, as enumerated by the number of strategies given in the letters to the middle school students. Two independent raters who were blind to hypotheses and conditions coded the number of strategies provided in the letters. For example, when a participant suggested to start with looking at which vowels were provided, and then to match that vowel to a consonant, this was counted as giving two separate strategies. Inter-rater agreement was high, Cohen's kappa = 90%. When participants finished writing their letters to the middle school students, they were asked about suspicions regarding the study. Thereafter, they were fully debriefed about the study's purpose, thanked, and received course credit.

Results

We conducted an ANOVA on the number of strategies suggested in the letters and found a main effect of condition, $F(2, 105) = 6.98$, $p < .001$, $r = .25$. Pairwise comparisons indicated that participants in the unknown goal condition, $M = 5.03$, and participants in the same

goal condition, $M = 4.95$, provided more strategies than those in the different goal condition, $M = 3.68$, $Fs > 10.86$, $ps < .01$, $rs > .30$. The two former conditions did not differ from each other in the number of strategies provided to the middle school students, $F < 1$.

Discussion

The results of this first study suggest that projecting one's goal induced more help to the target persons (middle school students) in terms of giving them more advice. Both participants in the unknown goal and same goal conditions came up with more strategies than participants in the different goal condition. And, as predicted, the former two conditions did not differ from each other in the amount of strategies provided.

However, it could be argued that the enhanced helping behavior observed in the unknown and same goal conditions may be the result of the relative lack of task complexity in the different goal condition. That is, telling participants that the target person has a complex goal (to be creative) versus a simple goal (to generate many words) might have sufficed for participants to give more advice. In the next study, we therefore added a further control condition in which participants were not given a goal and the target person's goal was unknown. Possible differences between this control condition and the unknown goal condition cannot be due to differential goal features, and thus allow an interpretation in line with goal projection. Finally, to assure that goal projection had actually occurred and to evade experimenter demand, we measured whether the goal was projected outside of awareness by using a primed lexical decision task.

Study 2: the projection of implicit goals and help given

Overview

Study 1 showed that participants who projected their goal gave more advice to target persons, but it did not explicitly distinguish the content of advice given to target persons. For instance, if a person projected an achievement goal, then she should presume that the target person needs help in obtaining an achievement goal as opposed to a social goal. Study 2 also examined whether goal projection influenced the quality of advice (not just its quantity as in Study 1).

Participants were informed that NYU wants to aid the process of adjusting to college life by allowing older students at the university to act as mentors and provide advice to incoming students. We established an implicit achievement goal in participants (rather than an explicit creativity goal as in Study 1) to test whether goal projection effects on help giving are found for implicitly activated goals; and to test if the results in the previous study replicate for goals of another content (i.e., an achievement goal rather than a creativity goal).

Depending on condition, participants received varying information about the goal of Tom B., an incoming NYU student. In the unknown goal condition, participants were told that Tom's goal was unknown. In the same goal condition, participants were told that Tom had a strong achievement goal. In the different goal condition, participants were told that Tom had a strong affiliation goal. In addition, in Study 2, we extended the design of Study 1 to include a further control condition termed the participant no goal/target unknown goal condition. Participants in this condition did not have any goal activated, and they were told Tom's goal was unknown. Finding more helping behavior in the unknown condition than in the added participant no goal/target unknown condition will support our hypothesis that goal projection rather than information about the target person's goal complexity led to increased helping behavior (see Discussion of Study 1).

Following the induction of the conditions, we administered a primed lexical decision task (see below) to measure participants' strength of the mental association between the incoming student, Tom B., and the achievement goal. In other words, we assessed whether participants in the goal conditions linked the target person's name to the achievement goal. Afterwards, participants were asked to write a letter of advice to Tom to help him adjust to college life.

Method

Participants

A total of 124 New York University students (85 females) participated in order to fulfill a partial requirement for an introductory psychology course.

Procedure and materials

Participants' goal. We implicitly primed an achievement goal using a scrambled sentence task on a computer in which all participants had to unscramble 15 sets of five words into grammatically correct four-word sentences (Srull & Wyer, 1979). This task has been commonly used to activate goals outside of people's awareness, which in turn managed to guide people's thoughts and behaviors (Bargh & Chartrand, 1999). In the three goal conditions (i.e., the unknown goal, the same goal, and the different goal conditions) eight of the sentences contained words related to achievement goals (e.g., perform, master, win). In the participant no goal/target unknown goal condition, all the sentences contained only neutral words matched for valence to the achievement words used in the three goal conditions (i.e., the unknown goal, same goal, and different goal conditions).

Target person's goal. Next, participants received one of three versions of information about the incoming student, Tom B. Participants both in the unknown goal and in the participant no goal/target unknown goal conditions were told that Tom's goal was unknown and not available. Participants in the same goal condition were told that Tom had a strong achievement goal, wanting to succeed academically. Finally, participants in the different goal condition were told that Tom had a strong affiliation goal, wanting to socialize and get along with others.

Strength of the mental association between Tom and the goal to achieve. Participants then performed a primed lexical decision task on a computer. They had to indicate as quickly as possible whether each word presented on the screen was a word or not by pressing one of two labeled keys. Each trial started with the presentation of a white fixation cross on a black screen for 500 ms followed by the presentation of a gray prime word for 50 ms. The prime word was backward masked by a random letter string (e.g., HKELKQPWRSD) to prevent participants from consciously seeing the primes; presentation time of the mask was 100 ms. The mask was replaced by a black screen with a presentation time that was randomly varied between 100 ms and 300 ms in order to prevent participants from anticipating the presentation of the target which followed next. Finally, the target word appeared in red and stayed on the screen until it was classified as a word or not.

The strength of the mental association between the target person, Tom, and the goal to achieve was measured by participants' mean reaction times on two trials consisting of the name “Tom” as the prime and the achievement-related words “achieve” and “succeed” as target words. We also measured and adjusted for the general accessibility of these two achievement-related words by participants' mean classification times on two trials consisting of a string of Xs as the prime and the achievement words of “achieve” and “succeed” as the targets. Finally, we presented 24 filler trials comprising a string of Xs as primes and neutral words as targets (e.g., describe, affect, survey); moreover, 28 trials were included with non-words as targets. Thus, the complete lexical decision task consisted of 56 trials, half of which were real word trials.

Letters of advice. Subsequently, participants wrote a letter of advice to Tom B. on preparing for his first semester at NYU. Participants were

given as much time as they needed to compose their letters. Two independent raters who were blind to hypotheses and conditions rated the letters on two dimensions: First, they assessed the content of the letters by counting the number of suggested achievement strategies (strategies in line with achievement goals) vs. the number of social strategies (strategies in line with affiliation goals). Examples of strategies in line with achievement goals were: to regularly attend classes, get to know the TA, go to office hours, and don't procrastinate on assigned homework. Examples of strategies in line with social goals were: meet as many people as possible, go out and explore the city with a friend, don't be afraid to talk to people who seem different, and make an effort to get along with your roommate (i.e., social strategies had to involve interpersonal interactions). Interrater reliability was high (Cronbach's *alphas* = .79 and .82, respectively), and disagreements between raters were resolved by discussion. Finally, in order to account for the variability in the lengths of the letters, percentages were computed separately for each type of strategy (i.e., achievement and social strategies were expressed as the proportion of the respective strategies over the total number of strategies). Overall, 16% of participants' advice consisted of academic strategies, 24% consisted of social strategies, and 61% consisted of advice irrelevant to either academic or social strategies.

Second, the quality of the letters was assessed separately for each type of strategy (i.e., achievement vs. social) on a 4-point scale, in which higher ratings represented more helpfulness (Cronbach's *alphas* = .77 & .80, respectively). Letters that received a rating of "1" provided the most common and basic strategies, and did not go into detail on implementing them. Letters that received a rating of "2" also provided the most common and basic strategies, but gave more details on implementing them. Letters that received a rating of "3" provided more elaborated strategies and gave details on implementing them. And letters that received a rating of "4" provided the most elaborated strategies that dealt with many aspects of college life, and gave a lot of details on implementing these strategies. Upon completion of the letter, the experimenter debriefed participants, thanked them for their participation in the study, and then gave them course credit.

Results

Strength of the mental association between Tom and the goal to achieve

We assessed whether participants in both the unknown goal and same goal conditions would differ in their lexical decision reaction times with respect to the target words "achieve" and "succeed" when preceded by the prime word of "Tom" from participants in the different goal and participant no goal/target unknown goal conditions. For this purpose, we conducted an ANCOVA with reaction times on the critical Tom-achieve trials as the dependent variable, adjusted for the general accessibility of the two achievement-related words (i.e., the reaction times for the xxx-achieve and the xxx-succeed trials).

We observed the predicted main effect of condition, $F(3, 115) = 8.50$, $p < .01$, $r = .26$. Specifically, participants in the unknown goal condition, $M = 532.93$, $SD = 87.85$, and participants in the same goal condition, $M = 538.91$, $SD = 82.28$, showed shorter reaction times than participants in the different goal condition, $M = 621.03$, $SD = 101.11$, $F(1, 115) = 14.23$, $p < .01$, $r = .33$, and $F(1, 115) = 19.44$, $p < .01$, $r = .38$, respectively (see Table 1, first row). Participants in the unknown goal and same goal conditions did not differ from each other, $F < 1$.

Participants in both the unknown goal condition and the same goal condition showed shorter reaction times compared to participants in the participant no goal/target unknown goal condition, $M = 617.75$, $SD = 115.92$, $F(1, 115) = 5.74$, $p < .02$, $r = .22$, and $F(1, 115) = 9.09$, $p < .01$, $r = .27$, respectively. And lastly, participants in the two control conditions (the different goal and the participant no goal/target unknown goal conditions) did not differ from each other, $F < 1$.

Quantity of relevant achievement advice

To test if individuals projecting their achievement goal onto the target person (Tom) would provide more achievement strategies, we assessed the quantity of achievement strategies provided. Specifically, we conducted an ANOVA on the percentage of achievement strategies and found a main effect of condition, $F(3, 120) = 7.25$, $p < .01$, $r = .24$. Pairwise comparisons indicated that participants in the unknown goal condition, $M = 18.6\%$, and participants in the same goal condition, $M = 18.5\%$, suggested more achievement strategies than participants in the different goal condition did, $M = 5.7\%$, $F(1, 120) = 13.96$, $p < .01$, $r = .32$, and $F(1, 120) = 14.22$, $p < .01$, $r = .33$, respectively (see Table 1, second row). There was no difference in the percentage of achievement strategies between the participants of the unknown goal and the same goal conditions, $F < 1$.

Participants in the unknown goal condition and participants in the same goal condition provided more achievement strategies than those in the participant no goal/target unknown goal condition, $M = 9.4\%$, $F(1, 120) = 6.93$, $p = .01$, $r = .23$, and $F(1, 120) = 7.02$, $p < .01$, $r = .24$, respectively. No difference was found between participants in the control conditions (the different goal and the participant no goal/target unknown goal conditions), $F < 1$. We performed the same analysis for the percentage of social strategies given (i.e., the proportion of social strategies over the total number of strategies) but, as predicted, we did not find any differences among conditions, $F(3, 117) = .55$, $p = .65$.

Quality of relevant achievement advice

We also compared the quality of achievement advice among conditions. We conducted an ANOVA with condition as the independent variable and quality of achievement advice as the dependent variable; we observed a main effect of condition, $F(3, 118) = 6.82$, $p < .01$, $r = .24$. Further analysis revealed that participants in the unknown goal condition, $M = 2.26$, $SD = 1.25$, and participants in the same goal condition, $M = 2.66$, $SD = 1.26$, gave achievement advice of higher quality than participants in the different goal condition, $M = 1.66$, $SD = 1.04$, $F(1, 118) = 4.61$, $p = .03$, $r = .19$, and $F(1, 118) = 12.85$, $p < .01$, $r = .31$, respectively (see Table 1, last row). Participants in the

Table 1
Study 2: Means (and standard deviations) of the strength of the mental association (in ms) between the target person (Tom) and the goal to achieve as well as the quantity and quality of achievement advice as a function of condition.

Dependent measure	Conditions			
	Unknown goal	Same goal	Different goal	Participant no goal/target unknown goal
Mental association (in ms)	532.93 (87.85)	538.91 (82.28)	621.03 (101.11)	617.75 (115.92)
Quantity of achievement advice	18.6%	18.5%	5.7%	9.4%
Quality of achievement advice	2.26 (1.25)	2.66 (1.26)	1.66 (1.04)	1.54 (.84)

Note. The strength of the mental association (in ms) between Tom and the goal to achieve was measured by a primed lexical decision task in which the target words "achieve" and "succeed" were preceded by the prime "Tom". The quantity of achievement advice was assessed as the proportion of achievement strategies over the total number of strategies. The quality of achievement advice was assessed by raters judging the degree of helpfulness of the achievement strategies.

unknown goal and same goal conditions did not differ from each other, $F < 1$.

Participants in the unknown goal condition and participants in the same goal condition gave higher quality achievement advice than those in the participant no goal/target unknown goal condition, $M = 1.54$, $SD = .84$, $F(1, 118) = 6.18$, $p < .02$, $r = .22$, and $F(1, 118) = 15.05$, $p < .01$, $r = .34$, respectively. The two control conditions (the different goal and the participant no goal/target unknown goal conditions) did not differ from each other, $F < 1$. Again, we performed the same analysis for the quality of social advice and, as predicted, did not find differences among the conditions, $F(3, 118) = .49$, $p = .69$.

Discussion

The results of Study 2 suggest that participants in the unknown goal condition projected the achievement goal they were previously primed with onto the prospective student named "Tom." In order to critically test whether goal projection had actually occurred and to evade issues of experimenter demand (that may have been present in Study 1), we assessed goal projection effects implicitly and observed that participants in the unknown goal condition and the same goal condition alike, showed stronger mental associations between the name of the target person (i.e., Tom) and goal-relevant words ("achieve" and "succeed") than the two control conditions. Indeed, the speed of the lexical decisions for the goal-relevant words after having been primed with "Tom" was faster in the unknown and same goal conditions than in the different goal and the participant no-goal/target unknown goal conditions.

Goal projection promoted both the quantity and quality of the help given: Participants' advice to the target person was plentiful and relevant, that is, tailored to the target person's presumed attainment of the projected goal. More specifically, participants in whom an achievement goal was activated but who did not receive any information about the incoming student's goal (unknown goal condition), just like those with an achievement goal who knew the student had the same goal (same goal condition), suggested a higher ratio of achievement (versus social strategies) to Tom than respective participants who thought Tom was pursuing a different goal (different goal control condition). This heightened ratio of suggested achievement strategies versus social strategies also evinced when comparing the unknown goal and the same goal conditions to the second control condition (participant no goal/target unknown goal), where participants did not have an achievement goal activated and did not have any knowledge of Tom's goal.

The quality of achievement advice given to Tom also differed among conditions in the predicted way. Participants in the unknown goal and same goal conditions gave higher quality achievement advice than participants in both the different goal and the participant no goal/target unknown goal conditions. This finding indicates that participants who projected their achievement goal and participants who knew they shared the same achievement goal with the target person gave better quality advice relevant to the target person's presumed pursuit of the projected goal than participants in the different goal and in the participant no goal/target unknown goal conditions.

Finally, Study 2 addressed possible alternative explanations for the results in Study 1. Specifically, it might be argued that in Study 1 the enhanced helping behavior observed in the unknown goal and same goal conditions compared to the different goal condition may have been due to a relative lack of task complexity in the different goal condition. Participants may have merely provided advice in line with the information about the target person. Therefore, Study 2 employed a further control condition (i.e., the participant no goal/target unknown goal condition). In this condition, no goal was activated in participants and they were told that the target person's goal was unknown. Thus, the complexity of the task was equivalent for both participants in the unknown goal condition (where participants were primed with the achievement goal) and the participant no goal/target unknown goal conditions. Finding differences between participants who were told that Tom B's goal is unknown depending on whether previously an achievement goal was activated versus not, suggests that it was not the information about the target person that was responsible for the observed differences between the same goal and unknown goal conditions versus the different goal condition in Study 1.

Study 2 showed that participants in whom we had implicitly activated achievement goals provided more and better help to Tom. Kawada et al. (2004, Study 3) have shown that modifying goal strength influences goal projection effects. Specifically, after giving their participants goal-relevant failure feedback goal projection effects were heightened. However, Kawada et al. only assessed goal projection directly, by examining participants' predictions of the target persons' behavioral intentions (i.e., competitive behavioral intentions ascribed to fictitious characters engaged in a prisoner's dilemma game by participants who had the implicit or explicit goal to compete). In Study 3, we went beyond the work by Kawada et al. and tested the influence of performance feedback indirectly—we assessed whether the strength of the mental association between the target person and the activated goal became stronger after participants received goal-related failure feedback rather than success feedback.

Study 3: varying the strength of implicit goals

Overview

Performance feedback has an important influence on goal pursuit. For instance, positive feedback by increasing expectations of successful performance (e.g., outcome expectations, self-efficacy expectations; Atkinson, 1964; Bandura & Cervone, 1983; Oettingen, Marquardt, & Gollwitzer, 2012; Weiner, 1974) increases goal commitment and encourages the pursuit of goal-directed actions. However, positive feedback has also been shown to decrease motivation when it signaled that sufficient progress was made (Fishbach, Eyal, & Finkelstein, 2010; Kappes & Oettingen, 2014). In line with these findings, negative feedback signaling a lack of progress on goal pursuit has been found to intensify goal strength (Atkinson & Birch, 1970; Fishbach & Dhar, 2005; Gollwitzer & Moskowitz, 1996; Lewin, 1935; McClelland, Atkinson, Clark, & Lowell, 1953; Wicklund & Gollwitzer, 1982).

In Study 3, we again told participants about a prospective student, Tom B., who is planning to attend NYU the following term. We established two conditions: the unknown goal condition and the participant no goal/target unknown goal condition. In the unknown goal condition, we activated an implicit achievement goal and told participants that the goal of the target person, Tom B., is unknown. In the participant no goal/target unknown condition, we did not activate a goal, but also told participants that the goal of the target person is unknown. Subsequently, all participants completed a primed lexical decision task (as described in Study 2) that measured the strength of the mental association between Tom and the achievement goal. Thereafter, participants were asked to give advice to Tom on adjusting to college life.

To provide positive versus negative achievement feedback, we then asked participants to perform a supposedly unrelated task that tested achievement-related analytical skills. Half the participants then received success feedback indicating strong performance, while the other half received failure feedback indicating weak performance. Finally, participants worked on the same primed lexical decision task a second time, to test whether the performance feedback affected the strength of the mental association between Tom and the achievement goal.

We expected a stronger association between Tom and the achievement goal after having received failure feedback (as compared to success feedback) within the participants of the unknown goal condition. In contrast, we expected the association between Tom and the

achievement goal to remain weak and unaffected regardless of feedback type within the participants of the no goal/target unknown control condition.

Method

Participants

A total of 78 New York University students (52 females) participated to fulfill a partial requirement for an introductory psychology course.

Procedure and materials

Participants' goal. Participants in the unknown goal condition were primed with an achievement goal, while participants in the participant no goal/target unknown goal condition were not primed with an achievement goal (see Study 2 for the priming procedure).

Target person's goal. Participants in both conditions were told that Tom's goal is unknown and unavailable.

Strength of the mental association between Tom and the goal to achieve before feedback. Immediately after receiving the information that Tom's goal is unknown, participants performed a primed lexical decision task that assessed the strength of the mental association between Tom and the goal to achieve (see Study 2 for procedure).

Letters of advice. Participants then wrote a letter of advice to Tom on the computer. Participants were given as much time as they needed to compose their letters. As in Study 2, the letters were analyzed according to the quantity of help given—assessed separately for the percentage of achievement strategies and the percentage of social strategies, Cronbach's *alphas* = .84 and .85, respectively. Overall, 14% of the participants' advice consisted of academic strategies, 32% consisted of social strategies, and 54% consisted of advice irrelevant to either academic or social strategies.

In addition, the quality of help in the letters was assessed separately for the elaboration of achievement strategies and the elaboration of social strategies, Cronbach's *alphas* = .80 and .82, respectively (see Study 2 for procedure).

Goal-relevant feedback. The new element added in this study was the goal-relevant feedback provided to participants. After participants wrote their letters to Tom, they engaged in an unrelated achievement test, a creativity test adopted from Förster, Friedman, and Liberman (2004), in which participants had to list different uses of four items (i.e., a plant, a brick, a mug, and a shirt). Participants read that their performance scores would be calculated based on the uniqueness and plausibility of their answers and would be compared to a previously tested sample of NYU college students. After submitting their answers, half of the participants received failure feedback, in which they were told their score of 786 ranked in the 23rd percentile. The other half of participants received success feedback, in which they were told their score of 786 ranked in the 87th percentile of NYU students.

Strength of the mental association between Tom and the goal to achieve after feedback. Participants completed again the same primed lexical decision task to assess whether the strength of the mental association between Tom and the goal to achieve was affected by the performance feedback.

Results

Strength of the mental association between Tom and the goal to achieve before feedback

We predicted that participants in the unknown goal condition would make faster lexical decisions with respect to the target words "achieve" and "succeed" when preceded by the prime word "Tom" as compared to participants in the participant no goal/target unknown goal condition. We conducted an ANCOVA analysis of reaction times on the critical Tom-achieve trials as the dependent variable, adjusted for the general accessibility of the two achievement-related words (i.e., the reaction times for the xxx-achieve trials) as a covariate, and condition as the independent variable. We again found the predicted effect of condition, $F(1, 75) = 8.63$, $p < .01$, $r = .32$. Participants in the unknown goal condition, $M = 514.74$, $SD = 68.79$, showed shorter reaction times than those in the participant no goal/target unknown condition, $M = 605.83$, $SD = 151.08$, suggesting a stronger association between the target person (Tom) and the achievement goal in participants of the unknown goal condition as compared to the participants in the control condition (see Table 2, first row).

Quantity of relevant achievement advice

We conducted an ANOVA on the percentage of achievement strategies provided (i.e., the proportion of achievement strategies provided over the total number of strategies). Participants in the unknown goal condition, $M = 20.7\%$, suggested more achievement strategies than participants in the participant no goal/target unknown goal condition, $M = 9.8\%$, $F(1, 76) = 21.71$, $p < .01$, $r = .47$ (see Table 2, second row).

We performed the same analysis for the percentage of social strategies given (i.e., the proportion of social strategies over the total number of strategies) and observed a marginal effect such that participants in the unknown goal condition, $M = 22.2\%$, offered fewer social strategies than participants in no goal/target unknown goal condition, $M = 29.7\%$, $F(1, 76) = 3.02$, $p = .09$, $r = .20$.

Quality of relevant achievement advice

We conducted an ANOVA on the quality of achievement advice and found that participants in the unknown goal condition, $M = 3.41$, $SD = .61$, gave more helpful achievement advice than participants in the participant no goal/target unknown goal condition, $M = 2.69$, $SD = .84$, $F(1, 76) = 18.75$, $p < .01$, $r = .44$ (see Table 2, last row). We performed the same analysis for the quality of social advice and found that participants in the unknown goal condition, $M = 2.96$, $SD = .83$, gave less helpful social advice than participants in the participant no goal/target unknown goal condition, $M = 3.31$, $SD = .60$, $F(1, 76) = 4.44$, $p = .04$, $r = .23$.

Strength of the mental association between Tom and the goal to achieve after feedback

We conducted a 2 goal condition (unknown goal vs. participant no goal/target unknown goal) × 2 feedback type (failure vs. success) ANCOVA with reaction times on the critical Tom-achieve trials as the dependent variable, adjusted for two covariates: The reaction times on

Table 2
Study 3: Means (and standard deviations) of the strength of the mental association (in ms) between the target person (Tom) and the goal to achieve as well as the quantity and quality of achievement advice as a function of condition.

Dependent measure	Conditions	
	Unknown goal	Participant no goal/ target unknown goal
Mental association (in ms)	514.74 (68.79)	605.83 (151.08)
Quantity of achievement advice	20.7%	9.8%
Quality of achievement advice	3.41 (.61)	2.69 (.84)

Note. The strength of the mental association (in ms) between Tom and the goal to achieve was measured by a primed lexical decision task in which the target words "achieve" and "succeed" were preceded by the prime "Tom". The quantity of achievement advice was assessed as the proportion of achievement strategies over the total number of strategies. The quality of achievement advice was assessed by raters judging the degree of helpfulness of the achievement strategies.

the xxx-achieve trials (the general accessibility of the two achievement-related words) and the reaction times on Tom-achieve trials before feedback. We found a main effect of condition, $F(1, 69) = 4.04$, $p < .05$, $r = .24$, a marginal main effect of feedback, $F(1, 69) = 2.80$, $p = .09$, $r = .20$, and the expected interaction effect, $F(1, 69) = 3.82$, $p = .05$, $r = .23$.

Negative versus positive performance feedback. Participants in the unknown goal condition who received failure feedback showed stronger associations between Tom and the achievement goal, $M = 506.17$, $SD = 50.13$, than participants in the unknown goal condition who received success feedback, $M = 597.22$, $SD = 102.89$, $F(1, 69) = 13.29$, $p < .01$, $r = .40$ (see Fig. 1). In contrast, those in the participant no goal/target unknown goal condition did not show any differences in their a priori weak associations between Tom and the achievement goal, whether they received failure feedback, $M = 598.71$, $SD = 90.32$, or success feedback, $M = 629.96$, $SD = 158.57$, $F < 1$.

Unknown goal condition versus control condition. Participants in the unknown goal condition who received failure feedback, $M = 506.17$, $SD = 50.13$, responded faster to the Tom-achieve trials than participants in the participant no goal/target unknown goal condition who also received failure feedback, $M = 598.71$, $SD = 90.32$, $F(1, 69) = 15.73$, $p < .01$, $r = .43$ (see Fig. 1). Finally, participants in the unknown goal condition who received success feedback did not differ in their lexical decision reaction times from participants in the participant no goal/target unknown goal condition who also received success feedback, $M = 597.22$, $SD = 102.89$ vs. $M = 629.96$, $SD = 158.57$, $F < 1$.

Discussion

In Study 3, we measured the strength of the mental association between the target person, Tom, and the goal to achieve (via a primed lexical decision task) twice—before and after performance feedback. Before participants received feedback and therefore in the unknown goal condition the achievement goal was still present, we observed a stronger mental association between Tom and the achievement goal in the unknown goal condition than in the no goal/target unknown condition, indicating that goal projection on Tom indeed had occurred. We also observed that participants in the unknown goal condition gave more and better quality achievement-related help to Tom compared to those in the participant no goal/target unknown goal condition. These findings replicate what we found in Study 2.

However, after participants received feedback, those who learned that they performed well no longer projected an achievement goal to Tom; participants who learned that their performance was weak continued to project an achievement goal to Tom. Specifically, the participants in the unknown goal condition (those in whom we had activated an implicit achievement goal) who received failure feedback showed a stronger mental association between Tom and the achievement goal than respective participants who received success feedback, confirming that the activated achievement goal was projected rather than an achievement attribute (e.g., a trait). At the same time, participants in the participant no goal/target unknown goal condition (those in whom we did not activate an implicit achievement goal), continued showing a weak association between Tom and the achievement goal, independent of the type of feedback received.

General discussion

In three experimental studies, goal projection affected behavior towards the target person. In a context where help giving was called for, the projection of a creativity goal (Study 1) and an achievement goal (Studies 2 and 3) promoted giving relevant help in support of the target persons' presumed goal pursuit. Goal projection promoted the quantity of advice given to target persons (i.e., middle school students; Study 1), and it heightened the quality of relevant advice given (i.e., Tom B.; Studies 2 and 3). In addition, Studies 2 and 3 used an implicit measure (i.e., a primed lexical decision task) to test whether goal projection on the target person had actually occurred; we observed stronger mental associations between the projected goal and the target person. Study 3 replicated these effects and thereafter manipulated the strength of the activated goal. The results confirmed again that a goal was projected on the target person rather than a personal attribute (e.g., achiever)—strong target-goal associations were maintained after goal-relevant failure feedback, but not after success feedback.

Previous work on goal projection showed that learning goals and performance goals (Study 1 of Kawada et al., 2004) as well as

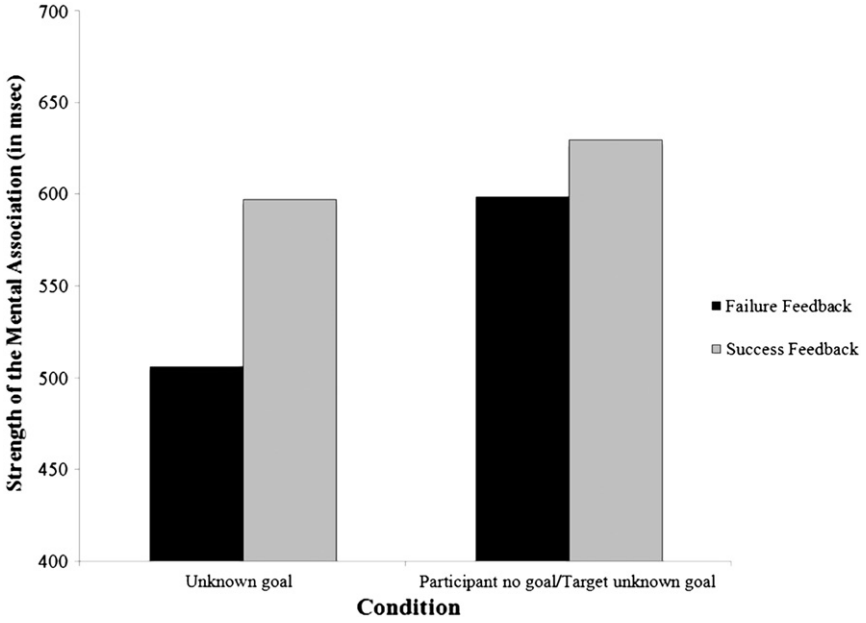

Fig. 1. The strength of the mental association (in ms) between the target person (Tom) and the goal to achieve, assessed by a primed lexical decision task, after receiving failure or success performance feedback.

competitive goals (Studies 2 & 3 of Kawada et al., 2004) were projected on hypothetical characters. The present research establishes that the projection of goals has effects on how the projecting person actually behaves towards the target person. Interestingly, the behavior resulting from projecting goals seems to depend on the context in which the projector is placed. We arranged the projector's context as calling for support of the target person. Indeed, participants projecting their creativity goal (Study 1) and achievement goal (Studies 2 & 3) on the target persons were more supportive of them, in both quantity and quality of help-giving.

Importantly, in Studies 2 and 3 we measured goal projection effects on the target person indirectly through a primed lexical decision task. Previous research on goal projection (and social projection at large) focused on measuring projection effects explicitly by directly asking research participants for their assumptions about the target persons' goals (e.g., Kawada et al., 2004) or measuring participants' interpretations of the target persons' preferences, inclinations, or tendencies (e.g., Ames, 2004a, 2004b; Krueger & Zeiger, 1993; Lemay & Clark, 2008). In the present research, we assessed goal projection indirectly by assessing the mental association participants formed between the presumably projected goal and the target person. As compared to the relevant control groups, we observed a stronger mental association between the goal and the target person for participants in whom we had activated the implicit goal and who were also told that the goal of the target was unknown (Studies 2 and 3), and this mental association stayed strong after relevant negative (vs. positive) performance feedback (Study 3).

A process explanation

In the classic Robber's Cave study, Sherif and colleagues observed that goal sharing induced prosocial behavior and alleviated intergroup bias and conflict (Sherif, Harvey, White, Hood, & Sherif, 1961; Sherif & Sherif, 1953). Follow-up research analyzing the potential mediating processes arrived at three distinct processes recategorization, decategorization, and mutual intergroup differentiation (see e.g., Rabbie & Horwitz, 1969; Rabbie & Wilkens, 1971), which all may serve as underlying mechanisms of the observed effects of goal projection.

Recategorization aims to define group categorization at a higher level of abstraction; it promotes inclusiveness in ways that reduce intergroup bias and conflict by increasing the salience of the superordinate group identity (see Allport, 1954; Brown & Turner, 1981; Feshbach & Singer, 1957). In contrast, decategorization occurs when members of two groups perceive themselves as individuals separate from their group identity (Wilder, 1981) thus promoting personalized, self-revealing interactions with others. These enable them to get to know one another and even become friends (Pettigrew, 1997, 1998), ultimately undermining stereotypes and reducing intergroup bias and conflict (Brewer & Miller, 1984; Miller, Brewer, & Edwards, 1985). Finally, mutual differentiation reduces intergroup bias and conflict by allowing the individual to exercise mutual distinctiveness in the context of cooperative interdependence, which means to divide labor in a way that utilizes each group's strengths and weaknesses (Deschamps & Brown, 1983; Hewstone & Brown, 1986).

With respect to the present studies, when participants were informed of holding the same goal with others, and when they projected their goal on others (assuming that the target persons have the same goal), the feeling of goal sharing might have given the sense that these others were members of an overarching larger unity. In other words, recategorization rather than decategorization and mutual differentiation allows the actor to view target persons as belonging to a common superordinate group. Thus, recategorization may qualify as a potential mechanism that may render projection effects useful in reducing bias and conflict in intergroup contexts.

Projector-target person relations

In the presented three studies, the participants and the target persons never met or interacted with each other. In fact, the behavioral consequences of goal projection may vary with the habitual interactions, the relationships, and the roles of the interacting partners. For example, goal projection might be less readily occurring when the target person is a member of an out-group, has a widely different role, or holds a different status (e.g., employee versus employer). Because the person whose goal is activated, may a priori assume that an out-group member has a different goal, she might be less likely to project her goal on this particular target person.

The present studies are also silent regarding how the target person will perceive the projector and how they will respond to the projector. It may well be that the behavior of the projector, even if it is well intended and geared towards help, comes across as an unwelcome surprise for the target person. Would, for example, the target persons in our studies (i.e., the middle school students and the incoming freshman) have appreciated the help they received from the projector? Research by Nadler and Fisher (1986) suggests that recipients of help may not always appreciate the help given to them, especially when receiving unsolicited help feels self-threatening. Though help, even when unsolicited, is welcome when the recipient feels cared for, it is rejected when the recipient feels dependent on the helper (Fisher, Nadler, & Whitcher-Alagna, 1982). Future research may examine how target persons respond to the projector's help, especially if that help is unwarranted or unneeded.

The behavioral consequences of goal projection may also depend on whether the projector and target person have a short-term or long-term relationship, and whether their relationship is professional or private. In caring romantic relationships, for example, presuming that the partner reciprocates the same degree of responsiveness as one does, leads to relationship satisfaction (Lemay & Clark, 2008; Lemay, Clark, & Feeney, 2007). In contrast, in uncaring relationships, people believing their apathy is reciprocated, undermines relationship satisfaction. Like in our experiments, then, behavioral effects of goal projection in close relationships should depend on the context of that relationship (i.e., whether that relationship is caring and secure vs. uncaring and insecure). For example, in caring relationships (romantic or professional), the projection of goals (e.g., going shopping, becoming a successful professional) may induce help giving for one's partner and thus should enhance relationship satisfaction. However, in uncaring relationships, where competition is the norm and providing supportive behavior is not called for, goal projection may induce competitive behavior that undermines relationship satisfaction. Understanding how goal projection impacts on-going relationships would be an important research step to take in the future.

Goal projection effects depend on the context

The present research focused on the consequences of goal projection in settings where providing supportive behavior was called for. Future research should test the consequences of goal projection in settings where competitive behavior is called for and providing supportive behavior is inappropriate (e.g., where people strive for the same prize, apply for the same job). In such competitive contexts, projection of long-term (e.g., finding meaning) as well as more trivial goals (e.g., talking to a colleague) may lead to competitive behavior and antagonism against the target person. In the same vein, when people expect competition or conflict in a negotiation (versus cooperation), they process information and behave in a competitive (versus cooperative) way (Bazerman, Curhan, & Moore, 2000; Carnevale & Probst, 1998). Carnevale and Probst (1998) found that when negotiators expected to compete, they used categories less inclusively (i.e., were less likely to categorize low-prototypic exemplars of a category as belonging to the category) in comparison to those who expected

cooperation. Future research may explore the consequences related to goal projection in different contexts. It seems important to also identify the specific mechanisms associated with goal projection in the respective contexts.

Conclusion

Attempting to understand and predict other people's internal states, such as their thoughts, feelings, and behavior is a vital part of social functioning that starts early in life. For example, developmental psychologists emphasize that infants make sense of the world by using their own intentional actions as a framework to predict others' intentions and internal states (Meltzoff & Gopnik, 1993; Wellman, 2002). The present research implies that adults use their own goals to gain insight into others' goals and this insight may play an important role in their behavior towards others, thus possibly impacting their short and long-term personal development.

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